Customer Loyalty Analysis in an heterogeneous market: a comparison between *a priori* segmentation and model-based segmentation

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Abstract Aim of Customer Loyalty Analysis is detecting suitable strategies to improve the loyalty of customers. Like in Customer Satisfaction Analysis PLS-Path Modeling (PLS-PM) is a suitable technique. As PLS-PM assumes homogeneity over population and customers' behaviors are different about loyalty, a PLS-Path model should be run in each homogeneous subgroup. Nevertheless these groups are not known. Then two way are possible: to use an *a priori* marketing segmentation or to adopt a model-based segmentation. The paper presents some considerations about these different approaches.

Key words: Customer Loyalty, Market Segmentation, PLS-Path Modeling

1 Introduction

If acquiring new clients is usually more onerous than maintaining the actual ones (addressing to them suitable actions), it becomes even more difficult when the market is in a recession phase. Therefore, taking care of clients adopting efficient loyalty politics becomes even more important in periods of doldrums - as the present one - than in expansion ones.

Nevertheless, the identification of appropriate strategies of Client Loyalty (CL) cannot leave aside from a right comprehension of the psychological processes underlying the client loyalty toward a brand or a provider. What does the client take into account when he decides to repurchase a product or to renew the use of a ser-

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vice? What can induce him to choose a different brand or to switch the provider? These are some of the questions which the marketing managers have to answer to. CL models try to find suitable answers to the questions (see 2). The parameter estimations of these models allow us to evaluate how much some factors, considered outstanding, act on client loyalty and, consequently, suggest us the more suitable policy of CL. Let us suppose, for example, that the CL model identifies the economic convenience of the offer as the most important factor affecting the client loyalty toward a given brand. Then, to maintain the clients loyal toward the brand, the marketing manager will have to keep under control their perception of convenience of the brand.

Nevertheless, reasonably loyalty behavior of the clients cannot be considered homogeneous. So, some clients could consider more important the convenience while others could give more importance to the perception of trust (quality and reliability) suggested by the brand. Again, other clients could have an innate predisposition to be loyal, so their behavior doesn't depend on the brand, but on their own way of being. It is evident that a model indiscriminately estimated on the overall clientele doesn't get these particularities to emerge and finally would give an information unhelpful to define appropriate policies of CL. Properly a single model should be estimated on each different segment. Nevertheless two orders of reasons make not easy an *a priori* individualization of such segments:

1. often the segments available to marketing manager is not suitable for the evaluation of Loyalty;
2. the differences among the segments should be related to the different client behaviors toward the brand, but these differences can be underlined only by the CL models.

1.1 Marketing segmentation and Customer Loyalty

Typically, developing a marketing strategy, the segmentation should aim to define clusters of clients that can be satisfied by a same product. Among these, the company picks out those retained more interesting (targets) and offers a product or service developed to satisfy their specific requests. The variables used to this purpose, *segmentation basis* may concern the benefits requested (*benefit segmentation*), the psychological profile (*psychographic segmentation*) or demographic characteristics as sex, age or zone of residence (*demographic segmentation*) (see [7]). Such variables typically are observed by *ad hoc* surveys.

The demographic segmentation is the easier to carry out, but only in some contexts it is useful to define segments of customers that desire the same product. For the same reasons it seems to be not able to define successful strategies of loyalty. The benefit segmentation is the more direct type of segmentation, even if its definition needs of an a priori clear idea about the possible benefits requested by the market. It is useful to define the product or service that should satisfy the clients (see [3]). In some contexts, individuals having the same requests (for example those that want

an economic city-car) could have the same behavior of loyalty (i.e. to give main importance to the economic convenience). In these cases such segmentation could be suitable to identify different loyalty behaviors. The psychographic segmentation is based on the idea that individuals showing similar behavior require similar products (or services). In this segmentation the *basis* are behavioral variables related to the general consumption; it is carried out on large population by specialized agencies, that generally give consultancy to the interested firms. This type of segmentation can be helpful to analyze CL if behavioral variables pertaining to Loyalty are included among the *basis*. The following table summarizes the degree of utility of the these kind of segmentation for CL analysis:

Table 1 Segmentation utility for CL

Segmentation	**CL usefulness**
Demographic	low
Benefit	middle
Psychographic	high (in theory)

2 PLS-Path Modeling in Customer Loyalty Analysis

From a modeling point of view, the analysis of the CL can be assimilated to CS analysis of which the CL represented an extension at the beginning. Therefore, the most important CL modeling as well as in the case of CS, is the Structural Equation Modeling (SEM). Such modeling consists of a main model (inner model) which relates latent (unobservable) variables that are associated to the constructs and defining the phenomenon under study. The unobserved variables are indirectly measured through a model based on directly observable variables (outer model). In SEM two approaches exist:

- SEM-ML (Structural Equation Modeling-Maximum Likelihood), the hard modeling, that requires restrictive assumptions depending on the maximum likelihood method;
- PLS-PM (Partial Least Squares-Path Modeling), the soft modeling, that requires less restrictive assumptions since the parameters estimation is based on partial least square method.

If segmentation in SEM-ML has been still achieved by Finite Mixture Models from several years (see [5]), segmentation in PLS-PM is more recent. We recall, among these, the following methods: *Finite mixture Partial Least Squares* (FIMIX-PLS, see [4] and [5]), *Partial Least Squares Typological Path Modeling* (PLS-TPM, see [6]) and *REsponse Based Units Segmentation* (REBUS-PLS, see [2]).

In the following table 2 some features of these methods are reported; we remand to the references for a more in deep exposition.

Table 2 Features of the methods

$features \setminus methods$	FIMIX-PLS	PLS-TPM	REBUS-PLS
distributional assumption	yes	no	no
different outer models	no	no	yes
iterative algorithm	no	yes	yes
number of groups fixed a priori	yes	yes	no

3 Short Considerations

On the basis of the features reported in table 2, both TPM-PLS and REBUS-PLS seem to be very interesting for CL-analysis (in particular REBUS-PLS seems to be the most powerful). Nevertheless these methods are quite recent and their properties still are not completely explored. Like all iterative methods they lead to a local optimum, not necessary being the best partition. Moreover there is not a formal proof of their convergence, but only practical results. On the other hand the classic methods of marketing segmentation are not oriented to CL analysis: they could turn to be useful if variables regarding loyalty behavior were included in the segmentation basis.

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